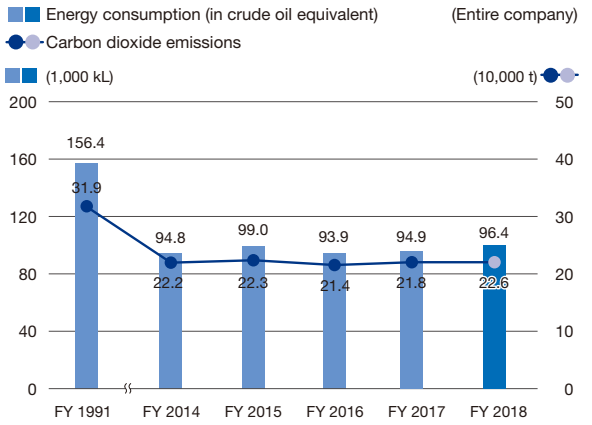
Environmental, Social and Governance (ESG) Data

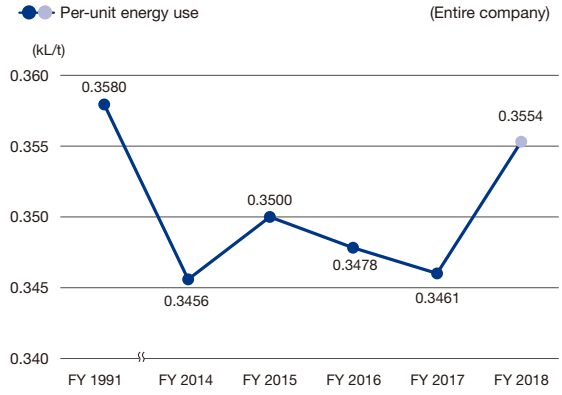
Environmental data of Nippon Soda

Changes in energy consumption and CO_2 emissions

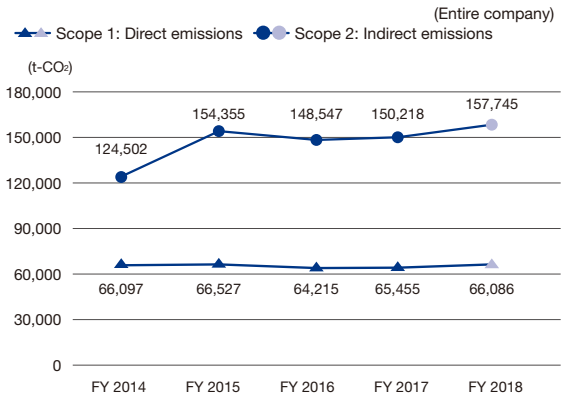


In FY 2010 and later years, the amounts of consumption at the Head Office, branches and other offices were included. The data collection area at Chiba Plant was changed.

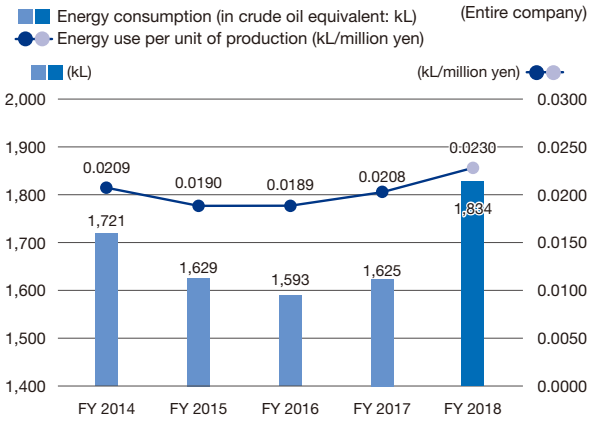
The energy use per unit of production



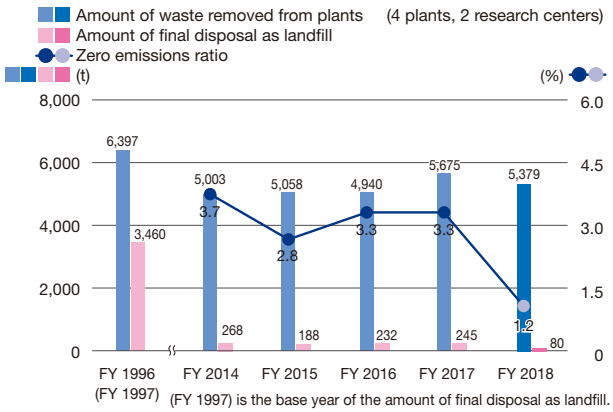
Changes in GHG emissions for Scope 1 and Scope 2



Changes in energy consumption related to transportation and energy use per unit of production



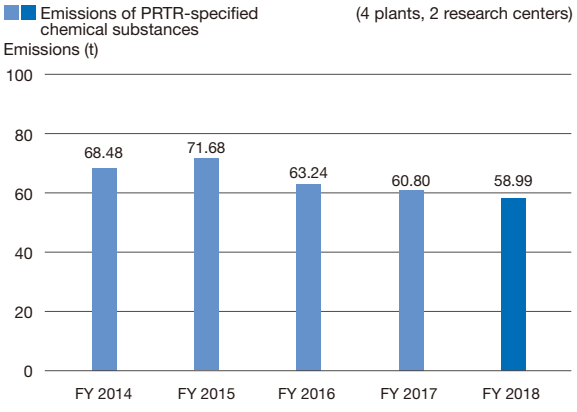
Change in the amount of industrial waste emissions



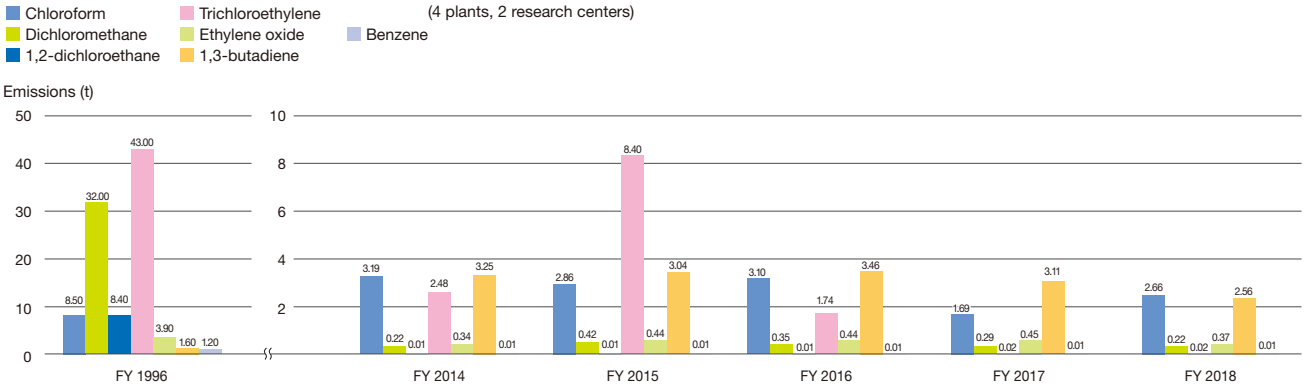
(FY 1997) is the base year of the amount of final disposal as landfill.

The amount of waste removed from plants does not include the waste sludge of activated sludge process at Takaoka Plant (which is treated with microbial autolysis at an external facility).
Base year of the amount of final disposal as landfill: FY 1997

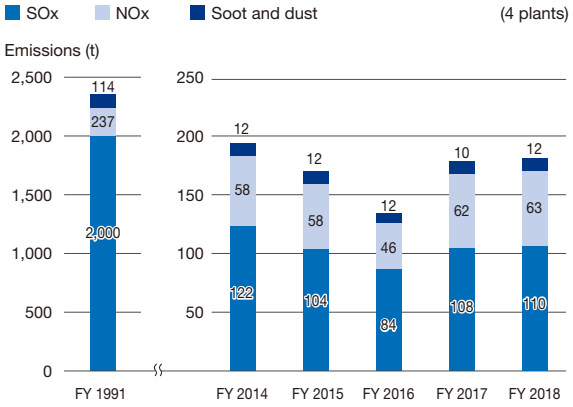
Changes in the emissions of Class 1 chemical substances specified by the PRTR Law



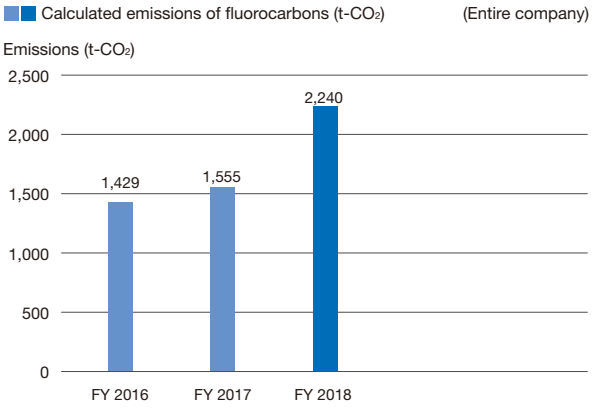
Changes in the emissions of voluntarily controlled chemical substances to the atmosphere



Changes in the emissions of substances controlled by the Air Pollution Control Act

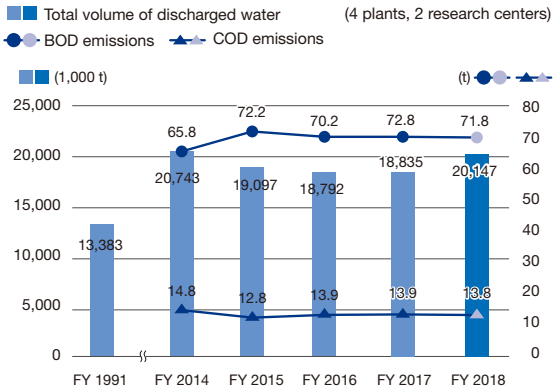


Change in the calculated emissions of fluorocarbons



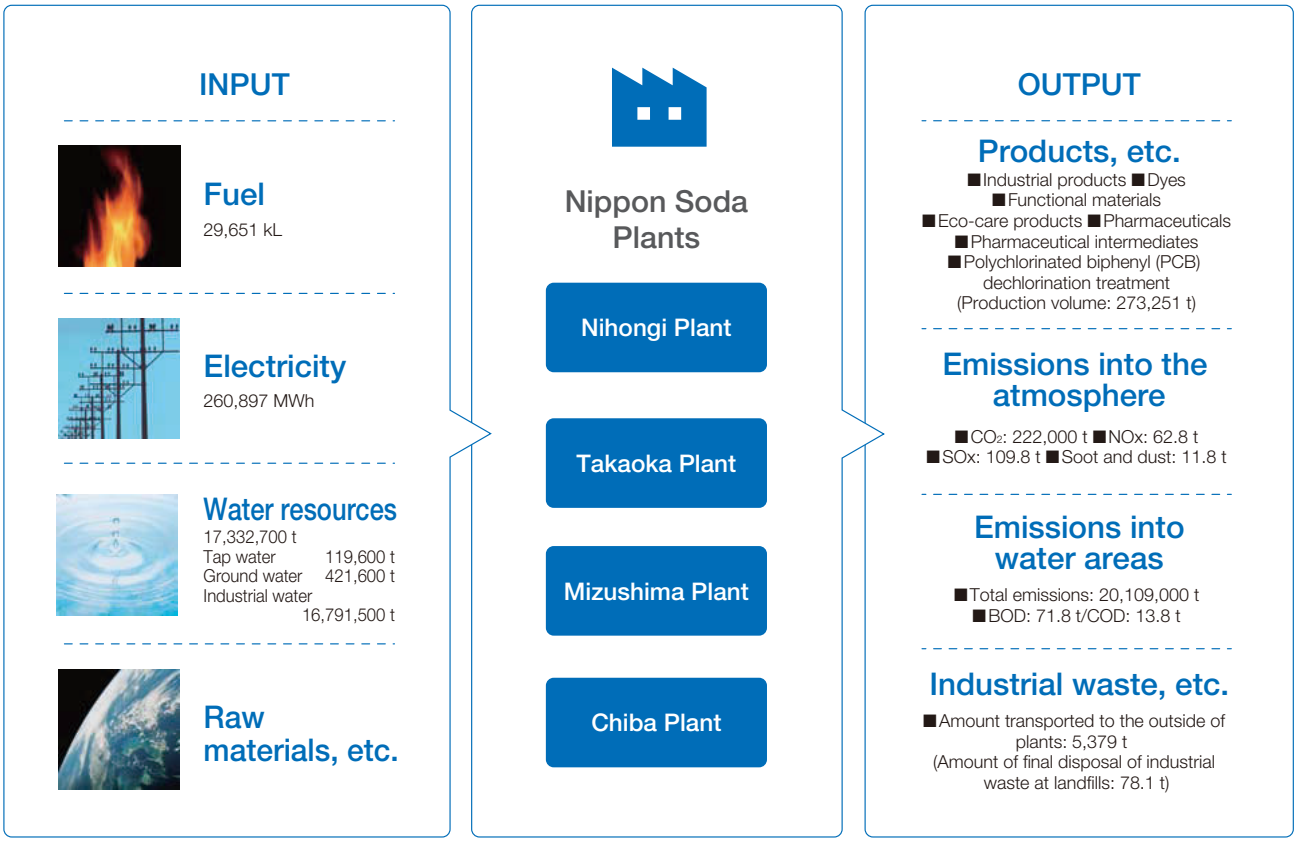
Causes for the increase in the emissions included deteriorated equipment and construction failures. To address these problems, we updated the deteriorated equipment, which has been completed.

Changes in the total volume of discharged water and emissions of BOD and COD



Major environmental impact data

The environment impacts of Nippon Soda's four major plants in Japan in FY 2018 are shown in the figure below:
(Figure: Major environmental impact data)



Violation of environment-related laws and regulations, etc.

(Nippon Soda)

April 24, 2017 at Takaoka Plant: Violation of the wastewater agreement: A concentration of arsenic of 0.06 mg/L was detected, which exceeded the agreed content of arsenic (0.05 mg/L). After reporting the violation to the authorities, we identified the cause and took measures to prevent recurrence.

July 16, 2017 at Chiba Plant: Violation of the wastewater agreement: A concentration of COD of 45.7 mg/L was detected, which exceeded the three-party agreed content of COD (23 mg/L). After reporting the violation to the authorities, we identified the cause and took measures to prevent recurrence.

February 27, 2018 at Takaoka Plant: Violation of the predetermined NOx concentration cap in the exhaust gas in the exhaust gas combustion furnace: The concentration of NOx of 131 ppm was detected, which exceeded the predetermined NOx concentration cap (100 ppm). After reporting the violation to the authorities, we identified the cause and took measures to prevent recurrence.

(Group companies)

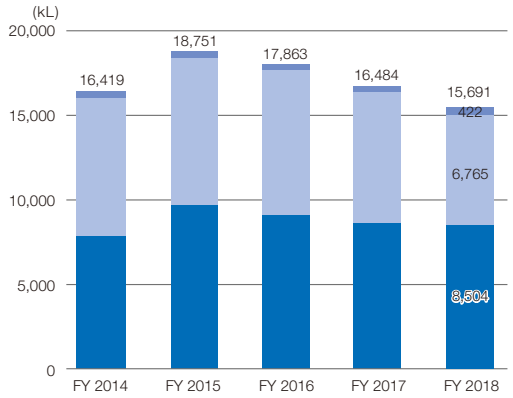
March 23, 2018 at Isohara Plant of Nisso Fine Co., Ltd.: When preparing for the notification of installation of a specified facility under the Water Pollution Prevention Act, it was revealed that we had failed to submit a notification in the past. We reported this failure to the authorities and submitted the "notification of installation" with an attached statement of reasons for the delay along with the "notification of abolition" to the Ibaraki Prefecture Kenhoku Kenmin Center, which were accepted on March 23. We also completed our investigation to identify the reason and take measures to prevent recurrence.

Environmental data of group companies

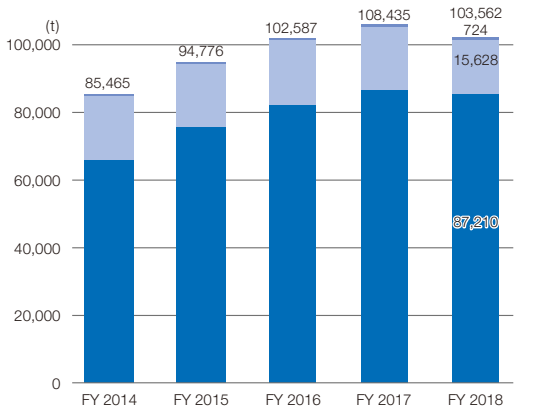
Manufacturing group company

Nisso Metallochemical Co., Ltd. Nisso Fine Co., Ltd. Shinfuji Kaseiyaku Co., Ltd.

Change in energy consumption (in crude oil equivalent)

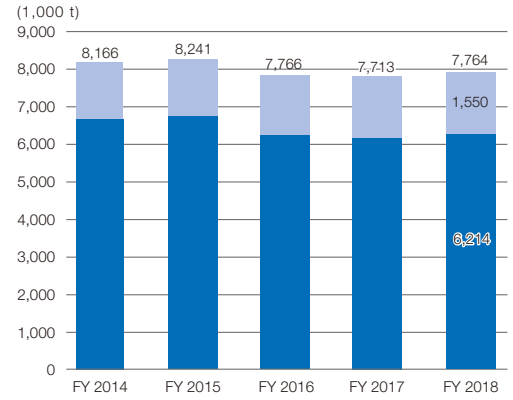


Change in the amount of carbon dioxide emissions

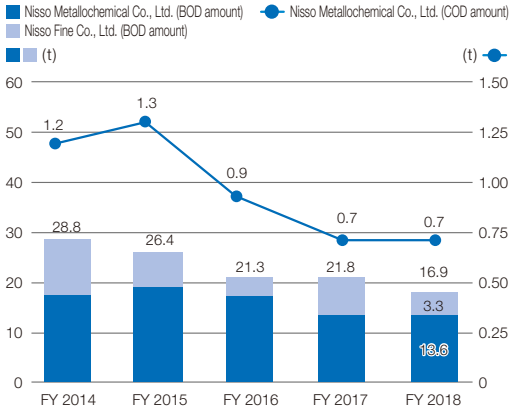


Note: The increase in CO_2 emissions was due to an increase in industrial waste oil received by Aizu Plant of Nisso Metallochemical Co., Ltd. under a contract.

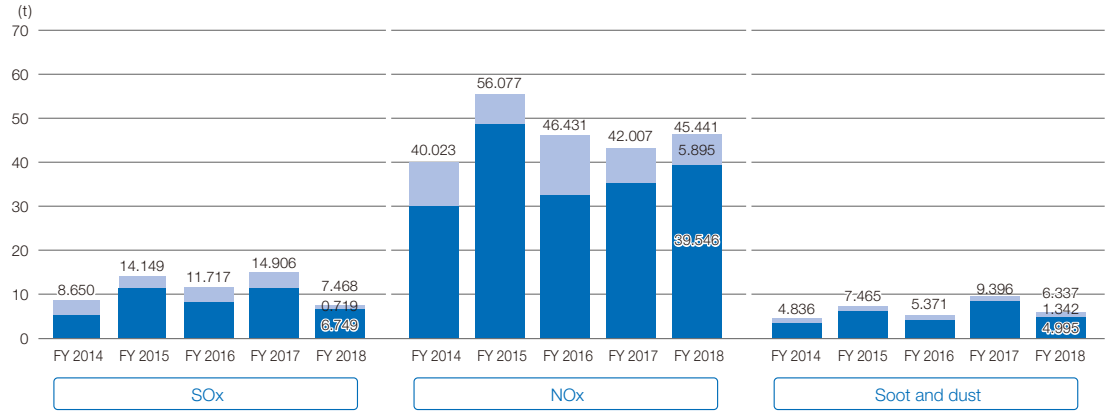
Change in the total volume of discharged water



BOD & COD of wastewater of manufacturing group companies

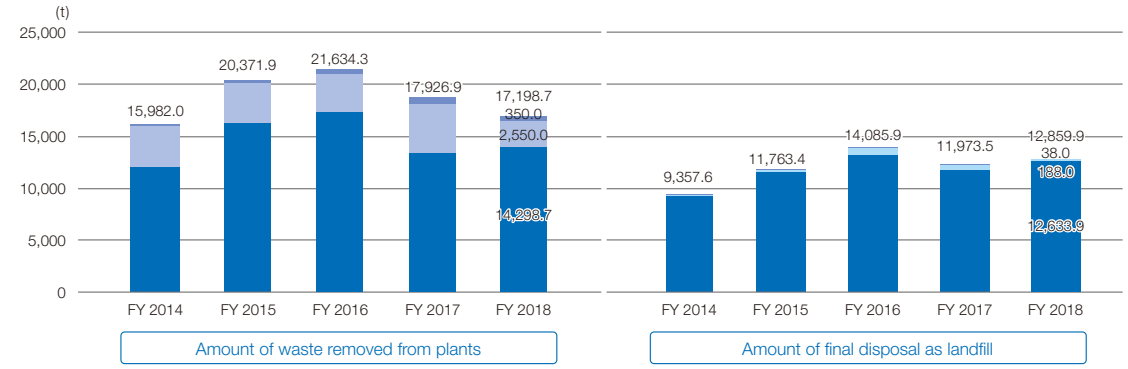


Change in the amount of emissions of substances controlled by the Air Pollution Control Act



■ Nisso Metallochemical Co., Ltd. ■ Nisso Fine Co., Ltd. ■ Shinfuji Kaseiyaku Co., Ltd.

Change in the amount of industrial waste emissions



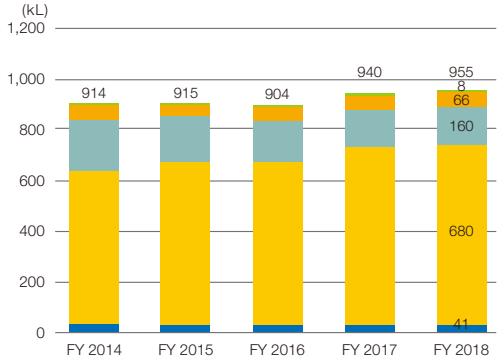
Overseas manufacturing group companies

(FY)		2014	2015	2016	2017	2018
Alkaline SAS (MSSA) (France)	Energy consumption (MWh)	261,886	251,968	277,814	271,004	289,841
	Total amount of wastewater (1,000 t)	277.49	261.85	253.03	235.79	230.62
Nisso Namhae Agro Co., Ltd. (Korea)	Energy consumption (in crude oil equivalent) (kL)	2,335.23	1,980.93	2,046.18	2,040.68	1,761.83
	Carbon dioxide emissions (1,000 t)	4.70	3.96	4.09	4.07	3.48
	Total amount of wastewater (1,000 t)	125.13	115.89	103.98	98.48	90.78

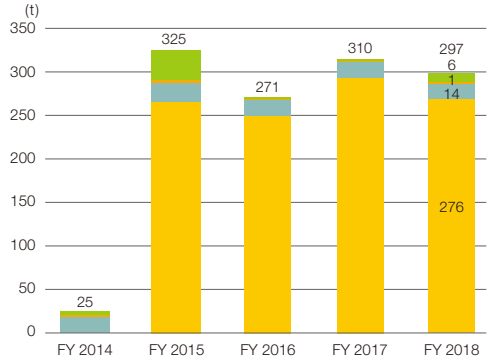
Non-manufacturing group companies

■ Nisso Shoji Co., Ltd. ■ Sanwa Soko Co., Ltd. ■ Nisso Engineering Co., Ltd.
■ Nisso Kensetsu Co., Ltd. ■ Nisso Green Co., Ltd.

Change in energy consumption (in crude oil equivalent)



Change in the amount of industrial waste emissions

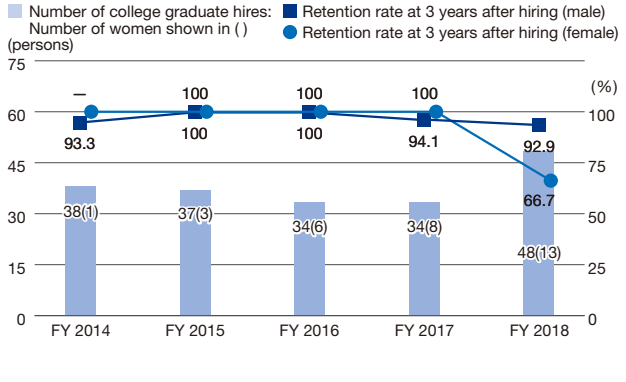


Note: The amount of waste generated at Nisso Shoji Co., Ltd. is not included.
The amount generated at Sanwa Soko Co., Ltd. is only included in the tabulation for fiscal 2015.

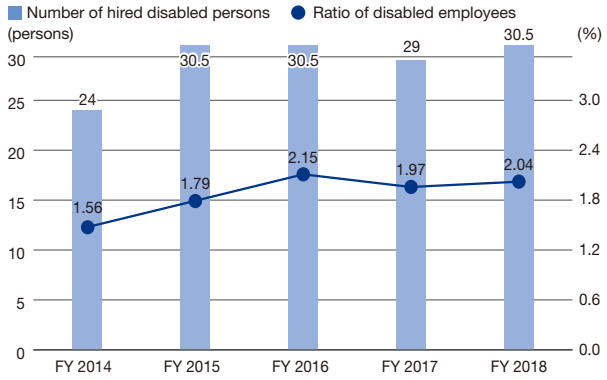
Environmental, Social and Governance (ESG) Data

Social data of Nippon Soda

Number of hired persons (by gender) and their retention rate



Employment rate of disabled persons



Change in the number of employees who took child/family care leave

FY	Those who took child care leave (person)		Those who took family care leave (person)	
	Men	Women	Men	Women
2014	1	6	0	0
2015	0	6	0	0
2016	1	2	0	0
2017	2	3	1	0
2018	3	4	0	0

Change in the number of employees who took maternity/child care leave and the rates of those returning to work and those remaining for three years after returning to work (by gender)

FY	Employees who took maternity/child care leave (employee)		Rate of employees returning to work (%)		Rate of employees remaining with the company (%)	
	Men	Women	Men	Women	Men	Women
2014	1 (1,151)	7 (134)	100	100	—	50
2015	0 (1,144)	5 (137)	—	100	—	83.3
2016	1 (1,137)	2 (142)	100	100	100	100
2017	2 (1,138)	3 (152)	100	100	100	100
2018	3 (1,130)	6 (159)	100	75	100	100

The numbers were counted at the first fiscal year of the leave.
The numbers in brackets are the total numbers of men and women respectively at the end of each fiscal year.
Retention rate is for employees who in this fiscal year are in their third year since returning to work.

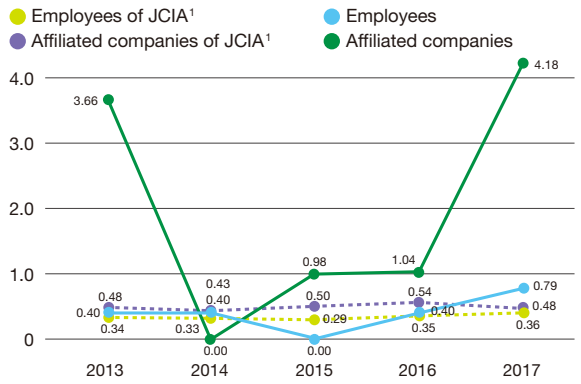
Total annual working hours per employee

Normal working hours (hours)	Early start and overtime hours (hours)	Holiday overtime hours (hours)	Paid annual leave days taken (days)	Various kinds of leave days taken (days)	Total annual working hours per person (hours)
1,825.1	130.1	9.1	15.0	1.8	1,763.9

Number of labor union members (Nippon Soda)

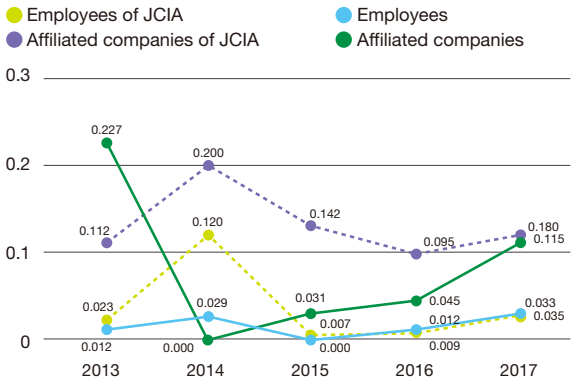
FY	The number of labor union members (person)	Average age (years)	Average length of service (years)	Rate of members (%)
2014	856	40.9	19.9	65.5
2015	845	40.6	19.3	65.0
2016	844	40.4	18.9	64.8
2017	820	39.3	17.6	63.3
2018	824	37.9	15.8	62.7

Change in occupational accident frequency rates



Occupational accident frequency rate: Casualties/Total working hours (per million hours)
1. JCIA stands for Japan Chemical Industry Association.
The data were collected from January 1 to December 31 of each year.

Change in the severity rate of occupational accidents



Severity rate of occupational accidents: Man-days lost/Total working hours (per 1,000 hours)
The data were collected from January 1 to December 31 of each year.